Agilent 7694 Headspace Autosampler Control Driver
User Guide

Scion Instruments
1 Bain Square
Livingston, EH547DQ
United Kingdom

©Scion Instruments 2017
Publication Number BR501582
Revision C

Contents

Introduction 3
Installation and Configuration 3
  Installing the Driver Software 3
  Configuring the Driver 3
    Configuring the Agilent 7694 Headspace Autosampler 3
Building a Method 5
  Creating a New Method 5
  Control Method Section for the Agilent 7694 Headspace Autosampler 7
    Parameters Control 8
    Sampling Control 9
    Temperature Control 10
    Timing Control 11
Starting and Viewing an Acquisition 12
  Quick Start and Sequence 12
    Quick Start (Single Acquisition) 12
    Sequence 13
  Running Acquisition Status 13
    Viewing a Running Acquisition 13
    Status of the Agilent 7694 Headspace Autosampler 13
    Headspace Status 14
    Sampler Status 14
    Overview Window 14

Introduction

This document describes the configuration of the Agilent Technologies 7694 Headspace Autosampler driver. It also explains how to build a control method for this driver, how to start and view a running acquisition and what actions are available during an analysis.

Installation and Configuration

Installing the Driver Software

To install the CompassCDS Drivers software, refer to the CompassCDS installation Guide.

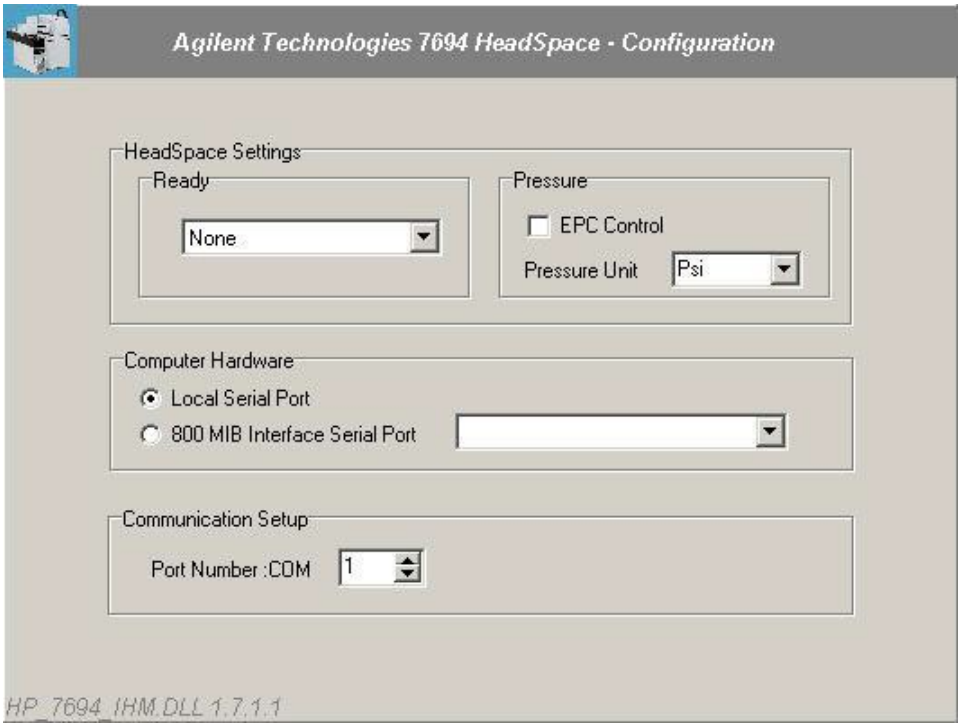
Configuring the Driver

The driver software configuration is done in the CompassCDS Configuration Manager when a new chromatographic system is created.

Configuring the Agilent 7694 Headspace Autosampler

Click on the

button corresponding to the Agilent 7694 Headspace Autosampler driver and the configuration screen appears:



Headspace settings Parameter Group

Ready:

Select in the scrolling list the behavior of the autosampler when it is ready to inject. If None is selected the autosampler will always inject when ready. If Wait is selected, the autosampler will wait

for the GC to be ready to inject. Finally, if Abort is selected the autosampler will abort the injection if the GC is not ready.

EPC Control:

Check the box if the autosampler is equipped with an electronic pressure control.

Pressure Unit:

Select in the dropdown list the pressure unit that will be displayed in the status. Three choices are available: Psi, Kpa and Bar.

Computer Hardware settings Parameter Group

Local Serial Port:

Select this option if the chromatograph is directly connected to the PC.

STAR 800 & 850 MIB-Interface Serial Port:

Select this option and then the name of the STAR 800 & 850 MIB -interface used to connect to the chromatograph.

NOTE: If you will be using the serial port installed in the STAR 800 & 850 MIB -interface, configure the MIB-interface before configuring the Agilent Technologies 7694 Headspace AutoSampler driver.

Communication Setup Parameter Group

Port Number: COM

Select the PC or STAR 800 & 850 MIB-interface Serial port number on which the autosampler will be connected.

NOTE: Once the system has been created and correctly configured, it must be associated to one or more projects to start some acquisitions. For more details about the creation and configuration of a system, refer to the CompassCDS Configuration Manager User Guide.

Press the button to print the current configuration.

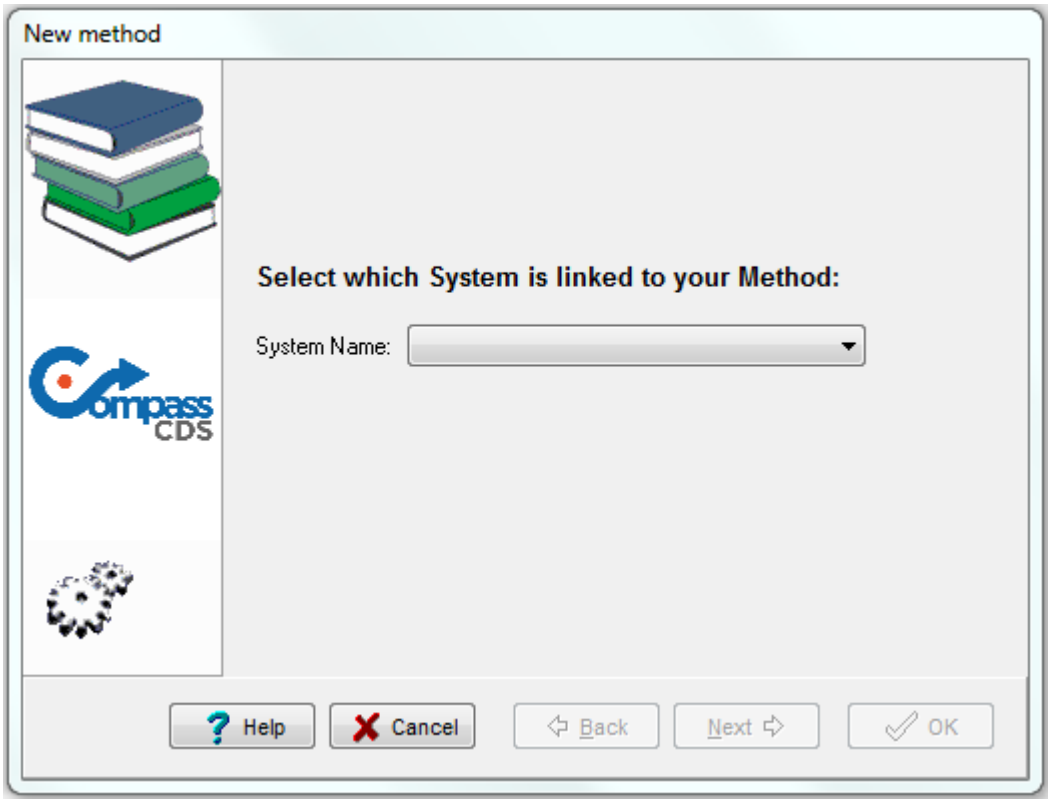
Building a Method

Creating a New Method

The method contains parameters for instrument control, data acquisition, chromatogram processing, and editing of final results. To initially set up a method, it is not necessary to define all of the sub-method sections; however, you must fill in the instrument control section prior to starting an acquisition.

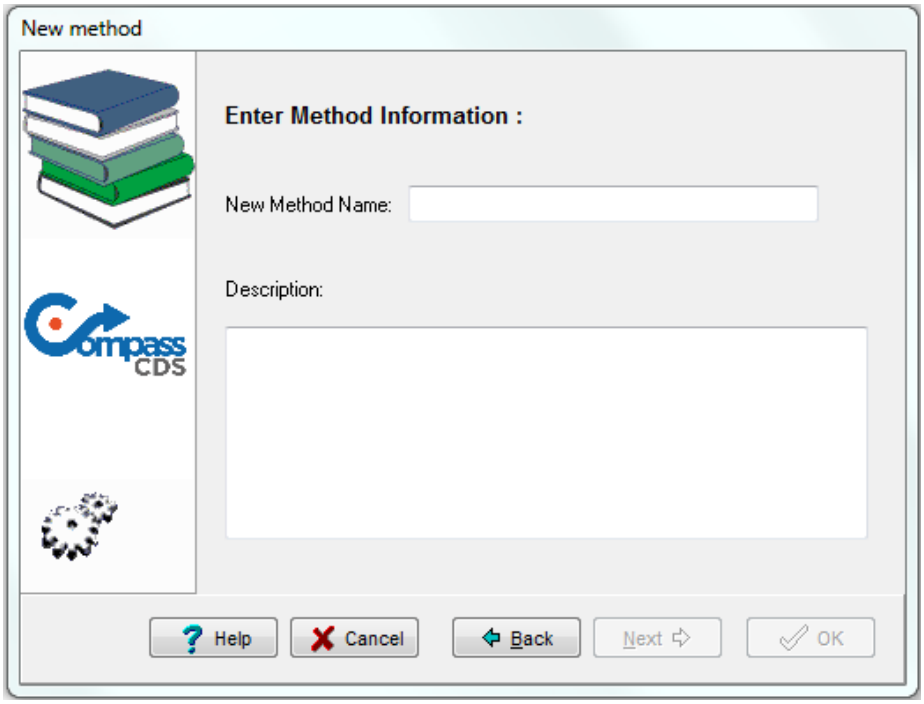
To create a new method, select the ***FILE / NEW METHOD*** option from the CompassCDS Chromatography Data System main menu.

A wizard guide will appear and provide assistance during the first steps of method creation:



Choose the system (chromatograph) associated with the method. A method is created for a particular system. When starting an acquisition, the name of the system that performs the acquisition must be correct, since method access is limited only to those methods associated with this system.

Once this field is completed, click on the Next button to move to the second step of the method creation:



Enter the *New Method Name* in the first field. In the *Description* field, enter information concerning the method (optional).

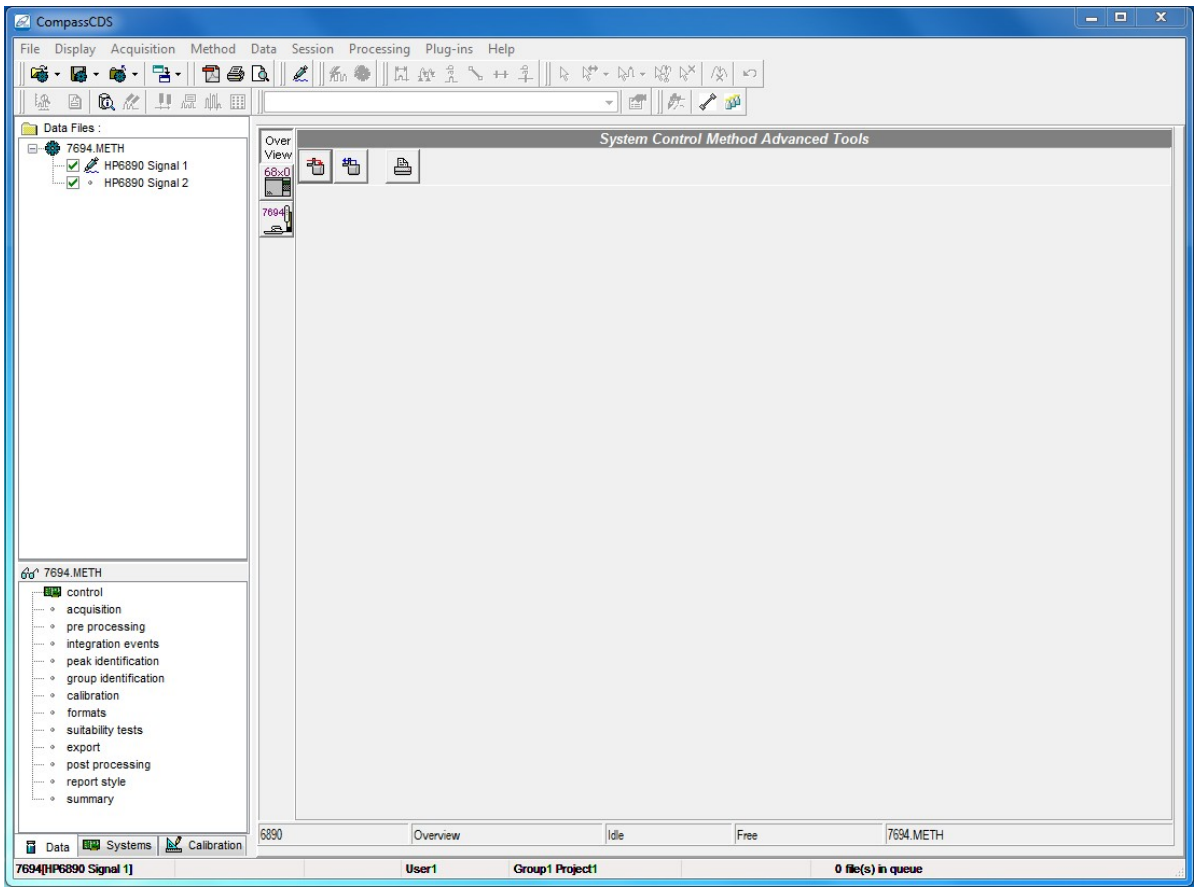
Once these two fields have been completed, click on the *OK* button. The new method is created and is opened with default parameters in the CompassCDS Chromatography Data System. The next step is the definition of each of the method sections.

The instrument control section must be defined in order to start an acquisition. In the following part of this guide, only the instrument control section for the Agilent 7694 Headspace Autosampler is detailed. Other parameters such as *Injection Volume*, *Vial* and *Rack* number may be necessary and are defined in the acquisition section.

NOTE: For more details about the programming of each method section, turn to the CompassCDS User Guide.

Control Method Section for the Agilent 7694 Headspace Autosampler

Once the new method is created, select the control section in the lower part of the browser. The following screen appears:



Press the button to display the System Control Method Advanced Tools window:

to send the current method to the instrument

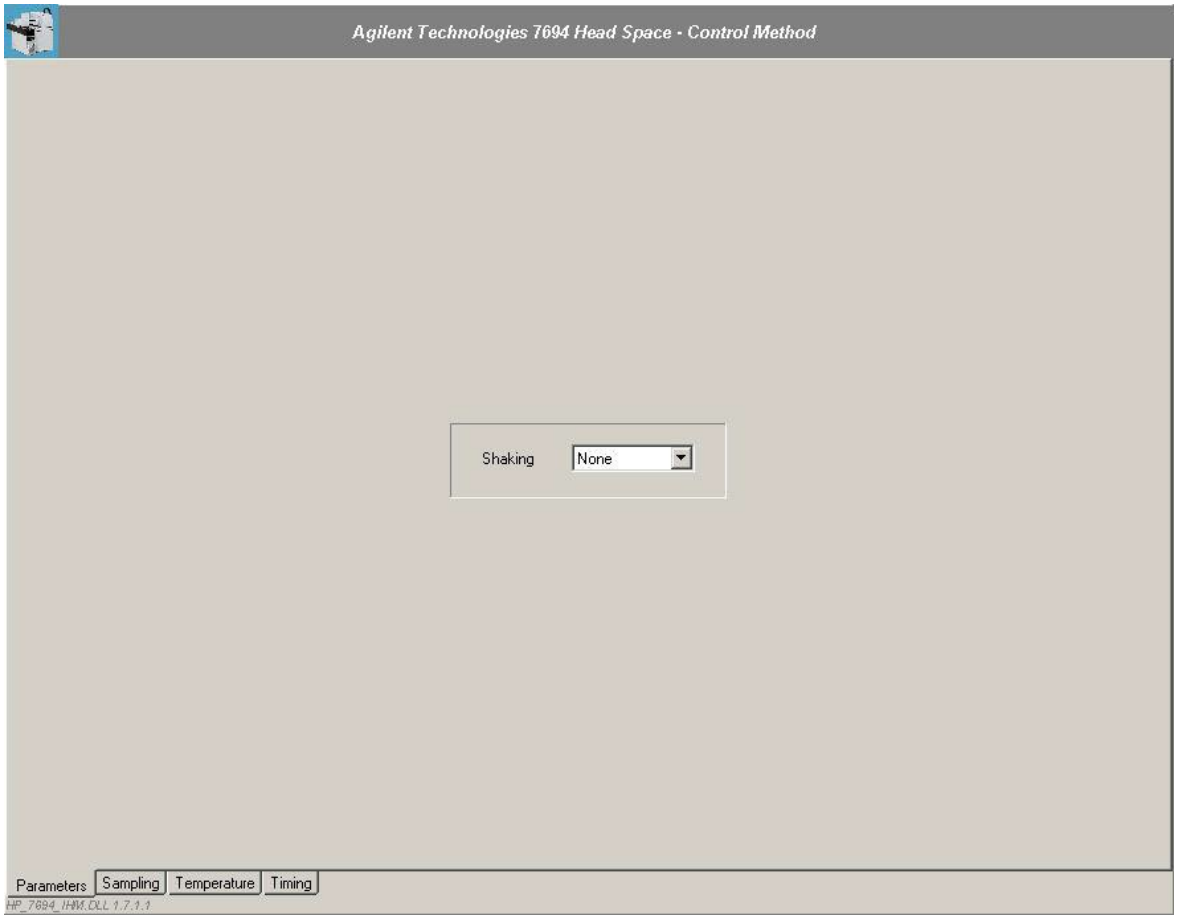
to get the active method from the instrument

to print the current method

Click on the button to display the Agilent 7694 Headspace Autosampler control method section.

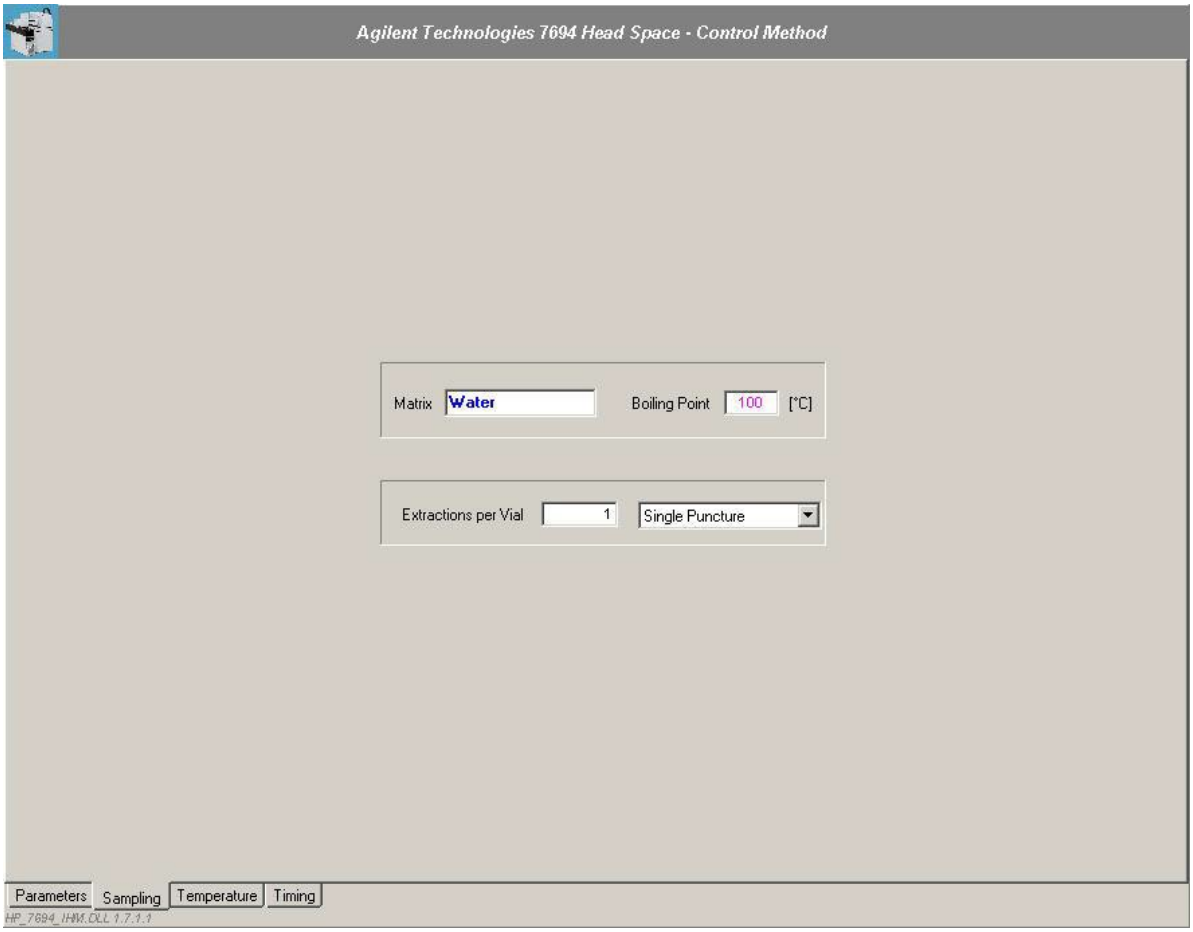
It contains four sub-sections: Parameters, Sampling, Temperature and Timing. Click on the required sub-section to define the corresponding parameters that will be used during the chromatographic run.

Parameters Control



Shaking: Select the agitation level of oven carousel during vial equilibration: None, Low or High.

Sampling Control



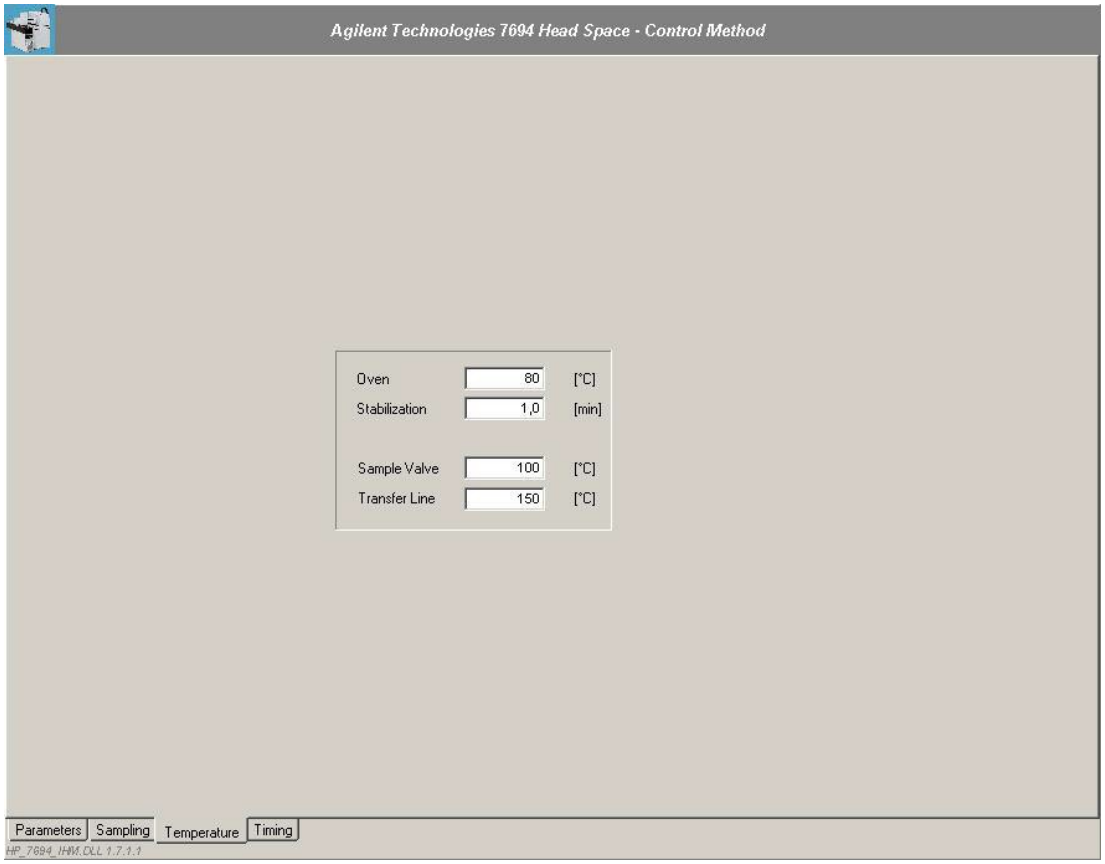
Matrix: Enter in this field the matrix of the sample.

Boiling point: Enter in this field the boiling point of the sample.

The two previous fields are only information fields not used by the instrument

Extractions per Vial: Enter in this field the number of extraction to do per sample. When the number exceeds one, select in the dropdown list the puncture mode. Two choices are available single puncture and multiple puncture.

Temperature Control



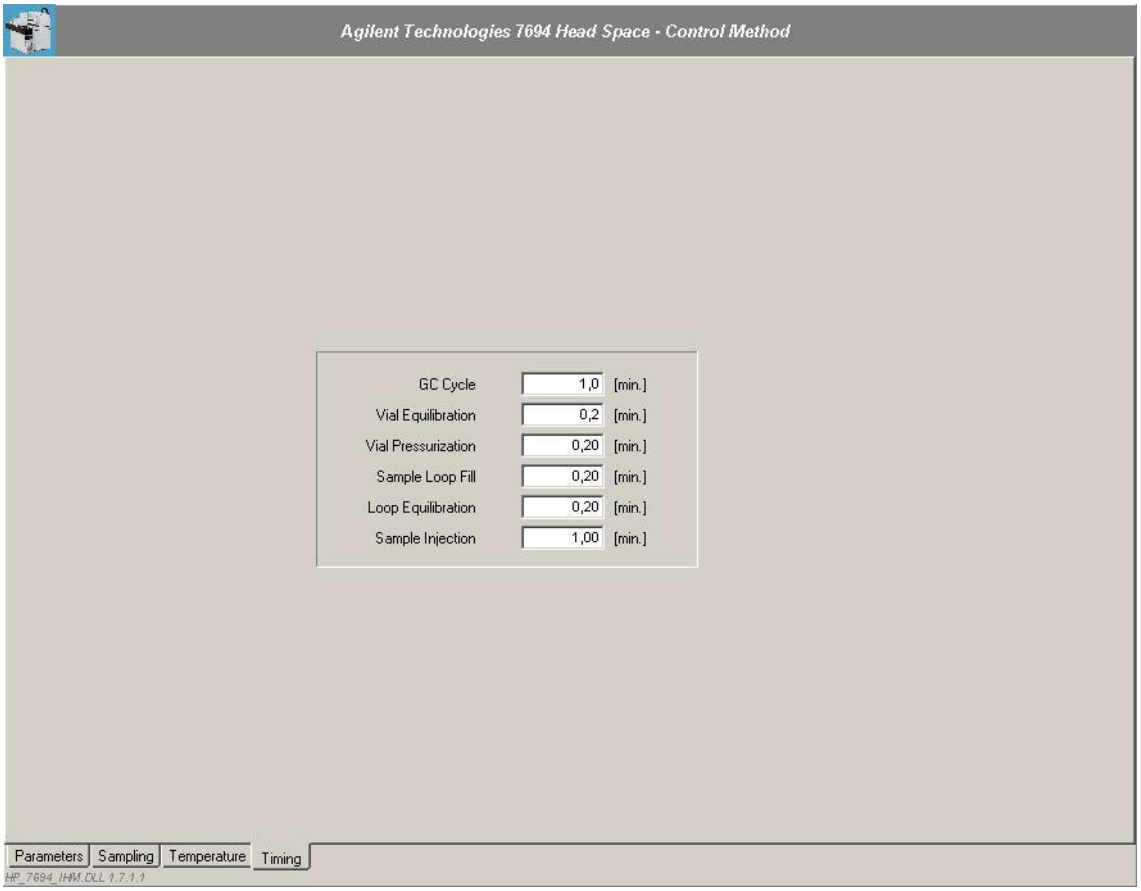
Oven: Enter in this field the temperature of the oven where the vials are prepared.

Stabilization: Enter in this field the temperature stabilization time of the oven.

Sample Valve: Enter in this field the sample loop temperature.

Transfer Line: Enter in this field the transfer line temperature.

Timing Control



GC Cycle: Enter in this field the time for the total GC run to complete. (Total run includes the GC run and cool–down time and the vial equilibration time.)

Vial Equilibration: Enter in this field the vial equilibration time which is the time the sample vial spends heating in the oven to form the headspace gas.

Vial Pressurization: Enter in this field the pressurization time. It specifies the time that gas is allowed to enter the vial through the sampling needle to build up additional pressure in the vial.

Sample Loop Fill: Enter in this field the sample loop fill time. It is the time during which the vent valve is open. The gases in the sample vial travel through the sample loop and are vented to the outside. This fills the sample loop with a precise aliquot of headspace gas.

Loop Equilibration: Enter in this field the loop equilibration time. It is the time after the vent valve closes during which the gases in the sample loop equilibrate with the pressure and temperature of the sample loop.

Sample Injection: Enter in this field the sample injection time. It is the time in which the sample valve is open and the gases in the sample loop are swept into the GC.

Starting and Viewing an Acquisition

Quick Start and Sequence

Once the instrument control method has been correctly programmed, an analysis can be started. The next section briefly describes how to start an acquisition.

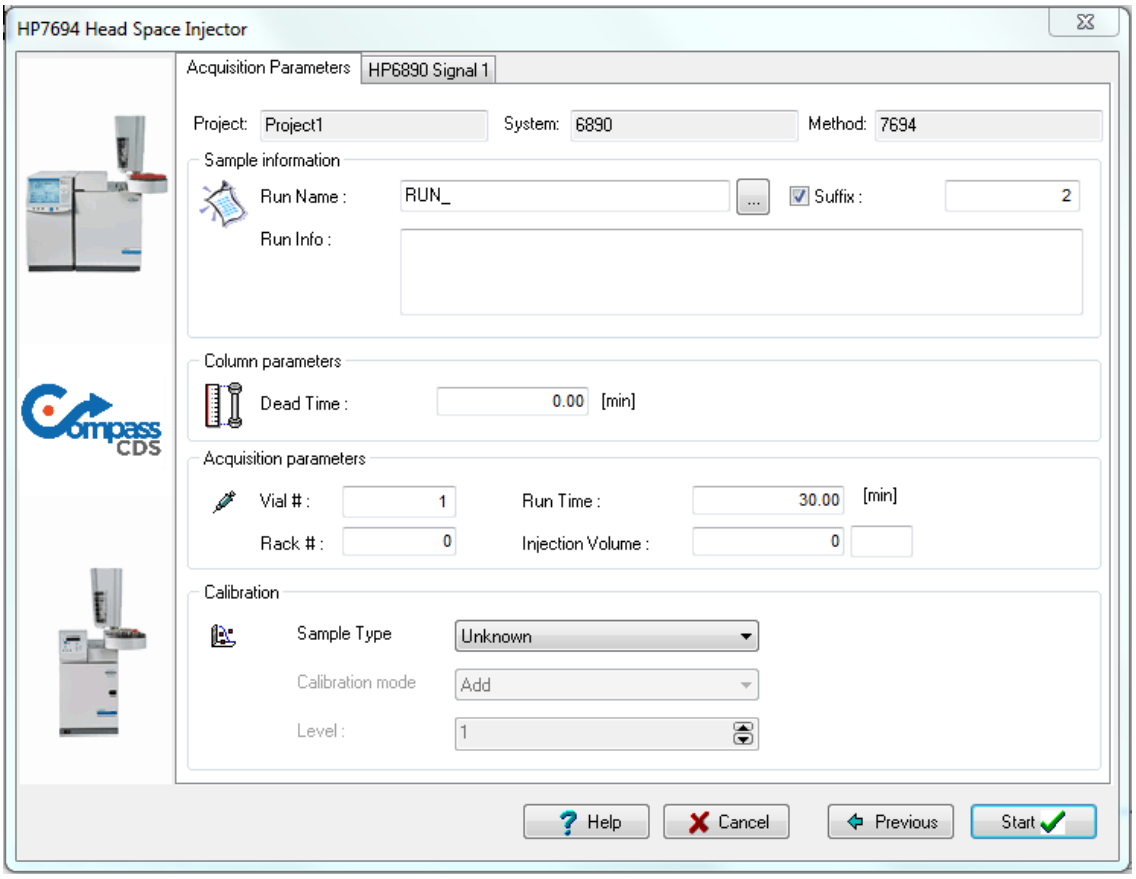
Quick Start (Single Acquisition)

Press the button.

In the Quick Start window, select the system, the method and optionally the project if connected in "All project" mode.

Press the OK button.

The following screen is displayed:



In the *Acquisition parameters* tab, required fields like the *Run Name*, the *Run ID* and the *Acquisition length* must be filled in before starting an analysis. Furthermore, if the system is equipped with an autosampler controlled by the CompassCDS Chromatography Data System, the *Injection Volume*, the *Vial* position and the *Rack* number (if required) must be entered.

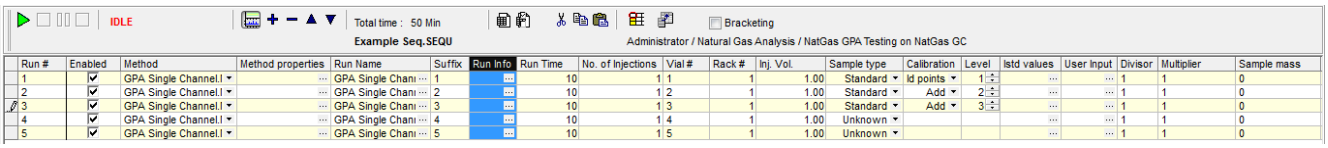
Other parameters associated with each acquisition channel can be entered in the Channel X tab.

Click on the Start button to start the acquisition if the system is a single-injector system or click on the Next button if the system is a multiple injector system. In a multiple injector system, the same parameters entered for the first injector must be entered for the other injectors before starting the acquisition.

Sequence

To create a sequence, select the FILE / NEW SEQUENCE menu, and complete the displayed creation wizard screen (refer to the CompassCDS Chromatography Data System User Guide), by entering the system name that will perform the analysis, the number of lines (corresponding to the number of samples), and the sequence name.

The sequence is displayed. Complete the sequence information columns (refer to the CompassCDS User Guide).



Run #	Enabled	Method	Method properties	Run Name	Suffix	Run Info	Run Time	No. of Injections	Vial #	Rack #	Inj. Vol.	Sample type	Calibration	Level	Istd values	User Input	Divisor	Multiplier	Sample mass
1	☑	GPA Single Channel.I	...	GPA Single Chani	1	...	10	1	1	1	1.00	Standard	Id points	1	...	...	1	1	0
2	☑	GPA Single Channel.I	...	GPA Single Chani	2	...	10	1	2	1	1.00	Standard	Add	2	...	...	1	1	0
3	☑	GPA Single Channel.I	...	GPA Single Chani	3	...	10	1	3	1	1.00	Standard	Add	3	...	...	1	1	0
4	☑	GPA Single Channel.I	...	GPA Single Chani	4	...	10	1	4	1	1.00	Unknown			...	...	1	1	0
5	☑	GPA Single Channel.I	...	GPA Single Chani	5	...	10	1	5	1	1.00	Unknown			...	...	1	1	0

The *Method Name*, the *Run Name*, the *Run ID,* and the *Acquisition length* must be filled in before starting the analysis. All these parameters are automatically imported from the acquisition part if defined in the method.

Start the sequence by clicking on the button.

NOTE: For more details about how to start an acquisition, refer to the CompassCDS User Guide.

Running Acquisition Status

Viewing a Running Acquisition

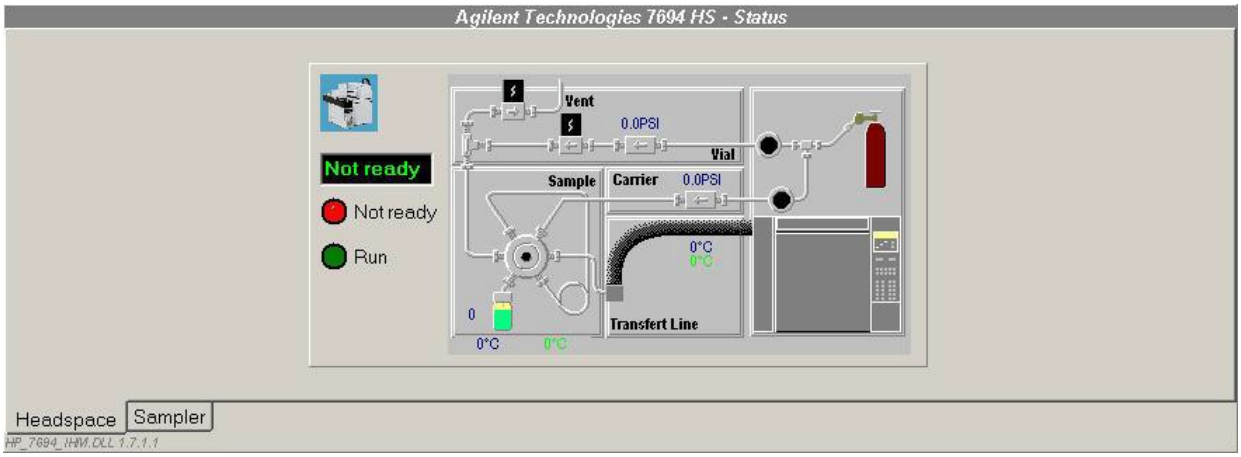
To view a running acquisition, click on the *Systems* tab then select the running system. A window is activated which is composed of two parts: the running chromatogram and the status window where the driver modules are listed.

Status of the Agilent 7694 Headspace Autosampler

Click on the

button corresponding to the Agilent 7694 Headspace Autosampler driver and the Agilent Technologies 7694 Headspace Autosampler status screen will appear. It contains two sub-sections: *Headspace and Sampler.* Click on the required sub-section to display the corresponding screen.

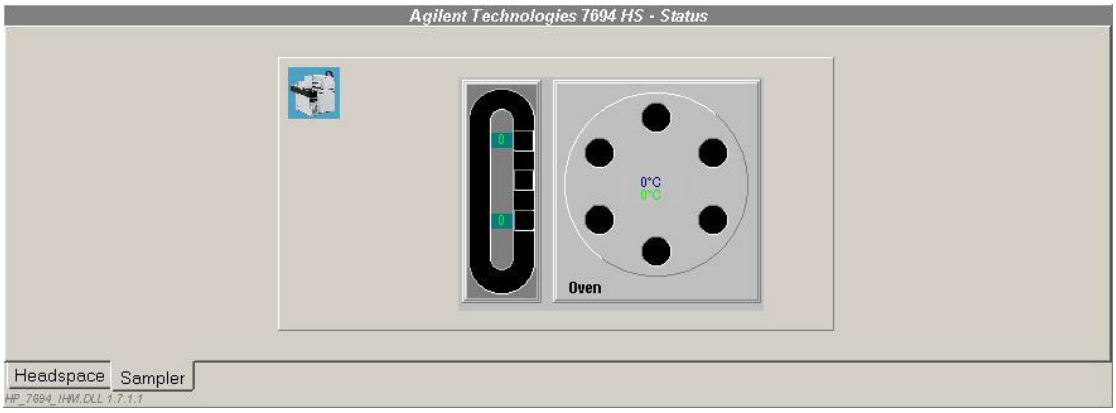
Headspace Status



This is a read-only window.

Information like temperatures and pressures of the instrument are displayed.

Sampler Status



This is a read-only window.

This screen displays the status of the vial in the oven.

Overview Window

Click on the Over View button: for this driver, nothing is displayed.